HANO, Ondrej, inz.

Automatic under-flux welding of Kaplan turbine rotor casings.
Zvar sbor 10 no.3:324-340 '61.

1. Vyskumny ustav zvaracsky, Brastislava.

HANO, V.

Cechovic, V. Strata of Oncophora in the coal basin of Salgotarjan. Tr. from the Czech. p. 331.

FOLDTANI KOZLONY. BULLETIN OF THE HUNGARIAN GEOLOGICAL SOCIETY, Budapest, Vol. 84, no. 4, Oct./Dec. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

HANOMOLO, I.M.; HANOMOLO, A.

Geology and petrography of the Somes-Muntele Rece-Maguri-Minastireni-Capus region. Dari seama sed 47:97-116 '59/60 [publ. '62].

HANOMOLO, I.M.; HANOMOLO, A.

[redacted]

Geology and petrography of the Somes-Muntele Rece-Maguri-Minastireni-Capus region. Dari seama sed 47:97-116 '59/60 [publ. '62].

HANDSCHUHOVA, O.

(11) (13)

Prague, [illegible], Vol [illegible], No 6, 20 March 62 (continued)

10 (cont'd)
[Ceskoslovenske [illegible]], [illegible]; pp 2[illegible]-27[illegible].

11. "The Treatment of [illegible] Syndrome in Children," by [illegible], MD, chief pediatrician (primarius) of the Pediatric Department [illegible] of Internal Diseases ([illegible]) [illegible] Hospital ([illegible]) in Prague-[illegible]; pp 271-27[illegible].

12. "Reliability of the [illegible] Test of Red Blood Cells," by Dr [illegible], chief (prednosta) of the [illegible] Department of the [illegible] Faculty Hospital ([illegible]) in Prague-[illegible], and Z. [illegible], of the same department; pp 2[illegible]-27[illegible].

13. "A Contribution to the Clinical Picture of [illegible] in Adult [illegible]," by Pavel [illegible], MD; [illegible], MD; [illegible] of the Clinic for Infectious Diseases [illegible]; chief of the clinic: docent Dr [illegible]; pp [illegible].

14. "A Case of Anaphylactic Shock Following the Administration of [illegible]," by [illegible], MD, of the [illegible] Public Health Institute] [illegible] Department of Internal Diseases (Interni oddeleni) [illegible]; department head: Dr [illegible]; pp [illegible].

15. "The Incidence [illegible] of [illegible] in Short and Long [illegible]," by [illegible], MD of the [illegible] Department of Social Medicine [illegible], headed by Dr J. [illegible], and Dr [illegible] in Prague, [illegible] Faculty of Medical Hygiene at Charles University [illegible] in Prague; pp [illegible].

17. "Fifth All-State Physiological Meeting in Karlovy Vary [a report]," by Karel [illegible], MD, of the [Institute of] Pathological Physiology ([illegible]) at the Faculty of Pediatrics ([illegible]) in Prague; pp [illegible].

— [illegible] —

HANOUS, J.

Proposal for a frequency multiplier, p. 52, SDELOVACI TECHNIKA (Ministerstvo strojirenstvi) Praha, Vol. 2, No. 2, Feb. 1954

SOURCE: East European Accession s List (EEAL) Library of Congress, Vol. 5, No. 12, December 1956

HANOUSEK, A.

"'Kace-2,' the A-2 training glider."

p. 202 (Letecky Modelar) Vol. 8, no. 9, Sept. 1957
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

HANOUSEK, F.

HANOUSEK, F.; KVETON, R.; KRALOVA, M.

Reactions of dicyanodiamide with formaldehyde. II. Kinetics of the formation of mono- and bishydroxymethyldicyanodiamide. p.739 (Chemicke Listy, Praha. Vol. 46, No. 12, Dec. 1952)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, June 1955, Uncl.

HANOUSEK, F.

CZECH

Reaction of amides with formaldehyde. V. Kinetics of the formation of mono- and bis-hydroxymethylmelamine. Rudolf Květon and František Hanousek (Sterne surovin[illegible], Střelské Hoštice, Czech.). Chem. Listy 48, 1200-8(1954); cf. *C.A.* 47, 22259*h*.—Rate consts. for the formation of monomethylmelamine at pH 7.7 at 50, 60, and 70° (0.0014, 0.003, 0.0061), bis-hydroxymethyl melamine at 40, 50, 60, 70° (0.0004, 0.001, 0.0024, 0.0054), and of the decomposition of the mono deriv. at pH 7.7 at 50, 60, 70° (0.00003, 0.0012, 0.0035), and of bis-deriv. at pH 7.1 at 40° (0.000013) were detd. Activation energies for the formation of the compds. are 16 and 17 kcal., resp., activation energy of the decomposition of the mono deriv. is 26 kcal. Heat of reaction of the formation of the mono deriv. is estimated at 10 kcal. VI. Insoluble products of the condensation of urea with formaldehyde in acidic solution. *Ibid.* 1537-42.—Insol. condensation products of CH_2O and $CO(NH_2)_2$ are formed at 2*N* concn. of acid, at 10^{-1} g. mole/l. of urea, and at temps. up to 80°. The compn. of the ppts. depends on the concn. of nondissociated hydroxymethylureas, on the diln., on the time of the addn. and of the condensation. It does not depend on the pH and temp. The no. of methylene ether bridges in the ppt. of the insol. condensate depends directly on the amt. of bis-hydroxymethylurea, that is on the excess of CH_2O in the starting soln. VII. Kinetics of the tris(hydroxymethyl)melamine. *Ibid.* 49, 83-6 (1955).—Measurements of the velocity of hydroxymethylation of bis(hydroxymethyl)melamine revealed that the rate of hydroxymethylation of melamine is approx. equal in all 3 steps. Rate consts. ($k \times 10^3$) and activation energies (kcal.) of formation and disintegration of *mono(hydroxy-*

methyl)melamine (I), *bis(hydroxymethyl)melamine* (II), and *tris(hydroxymethyl)melamine* (III) are given at 50, 60, and 70°, resp. I (pH 7.7): 1.4, 3.0, 6.1; 16; 0.03, 0.13, 0.26; 26. II (pH 7.7): 1.0, 2.4, 5.4; 17; 0.14, 0.32, 0.66; 17. III (pH 7.7): 1.8, 3.6, 7.4; 15; —, —, —; —. III (pH 7.9): 3.6, 6.8, —; 14; —, —, —; —. II (pH 7.9): —, —, —; 0.23, 0.48, —; 16. M. Hudlický

[illegible]

CZECHOSLOVAKIA/Kinetics. Combustion. Explosions. Topochemistry. Catalysis. B-9

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26216

Author : Rudolf Kveton, Frantisek Hanousek

Title : Insoluble Products of Condensation of Urea with Formaldehyde Forming in Acid Medium.

Orig Pub : Chem. listy, 1954, 48, No 10, 1537-1542

Abstract : See part V in RZhKhim. 1955, 48513

Card : 1/1

HANOUSEK, F.

Hydrogen bridges at the 2,3-cyclohexanol [1,3,3]-bicyclononane-2-ol-9-on derivatives. Coll Cz chem 29 no.8:1965-1966 Ag '64.

1. Institut fur Kernforschung, Tschechoslowakische Akademie der Wissenschaften, Rez bei Prag.

HANOUSEK, J.

[redacted]

Tissue therapy in cervical erosions. Cesk. gyn. 15 no.7:562-569 1950. (CIML 20:1)

1. Of the Gynecological and Obstetrical Clinic (Head--Prof. Jan Marsalek, M. D.), Hradec Kralove.

HANOUSEK, J.

Statistics on eclampsia in Czechoslovakia for 1929-1949. Lek.listy 6 no.7-8:229-236 1 Apr 1951. (CLML 20:9)

1. Of the Gynecological and Obstetrical Clinic in Hradec Kralove (Head—Prof. Jan Marsalek, M.D.).

HANOUSEK, J.

HANOUSEK J.

Tkanova lecba pri leceni rtg. vredu kuze. [Tissue therapy of skin ulcers caused by x-rays irradiation] Lek. listy 6:11 1 June 51 p. 330-2.

1. Of the Gynecological and Obstetrical Clinic in Hradec Kralove (Head--Prof. Jan Marsalek, M.D.).
   CLML Vol. 20, No. 10 Oct 1951

HANOUSEK, J.

Painless labor. Prakt. lek., Praha 32 no.2:37-39 20 Jan 1952.
(CLML 22:2)

1. Of the Obstetric-Gynecological Clinic (Head--Prof. J. Marsalek, M. D.) in Hradec Kralove.

FINGERLAND, A., Prof.; VORTEL, V., dr.; PIETROVSKI, E., dr.;
HANOUSEK, J., dr.

Embolism of the amniotic fluid. Cesk. gyn. 19 no.5:327-333
Oct 54.

(AMNIOTIC FLUID
embolism, pulm. in labor)
(LABOR, complications
embolism, pulm., amniotic fluid)
(PULMONARY EMBOLISM AND THROMBOSIS
amniotic fluid embolism in labor)

HANOUSEK, Jaroslav, MUDr

Electroencephalography in pregnancy toxemia. Cas. lek. cesk. 93 no.30:816-825 23 July 54.

1. Porodnicka klinika VLA v Hradci Kralove.
(PREGNANCY TOXEMIAS, physiology,
EEG)
(ELECTROENCEPHALOGRAPHY, in various diseases,
pregn. toxemia)

VOTIK, Ota; VACHA, Karel; HANOUSEK, Jaroslav

Differential diagnosis difficulties in eclampsia and acute brain injuries. Sborn. ved. prac. lek. fak. Karlov. univ. (Hrad Kral) 4 no.5:629-633 '61.

1. Gynekologicko-porodnicka klinika; prednosta prof. DrSc. MUDr. Pazourek Gyn.-por. oddeleni KUNZ v Pardubicich; prednosta primar MUDr. J. Hanousek.
(PREGNANCY COMPLICATIONS) (BRAIN INJURY ACUTE)
(ECLAMPSIA)

HANOUSEK, J.

11 D

CA

PROCESSES AND PROPERTIES INDEX

Bleeding of the grapevine. Václav Káš and Josef Hanousek. *Sborník Česk. Akad. Zemědělské* 19, 208-72(1946). In connection with the partial sterilization of the soil at the State Experimental Station in Budňay near Karlštein in 1946, the bleeding of the grapevine was studied after the spring pruning. In 24 hours from one twig the Blue Portuguese variety produced 20 ml. and the White Burgundy 135 ml. of sap. The most produced was 210 ml., with an average 77 ml. The chem. analyses of 1000 ml. of sap was: 3.5 g. reducing sugars, 0.35 g. polysaccharides, 0.04 g. N, 0.356 g. K_2O, 0.148 g. CaO, traces Fe_2O_3 and Al_2O_3, 0.013 g. P_2O_5, and no Mn. These results agree with Nessler's with the exception of N and P_2O_5 which are low. Very significant is potash which according to Stoklasa, *et al.* (C.A. 15, 2481) plays an important role in the formation of new living matter in photosynthesis owing to its radioactivity. Jan Micka

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

HANOUSEK, J.

CA

2

A reliable antimony electrode used in soil chemistry and microbiology. Josef Hanousek (Státní výzkum. ústavy zem., Prague, Czech.). *Sborník Českoslov. Akad. Zemědělských* 32, 290–300(1960).—The Sb electrode made by casting of pure Sb and 10–12% of Sb_2O_3 is suitable for measuring pH within the limits of 2.0 to 12.0. It is stable for one hr. if set into the measured substance and for several weeks if exposed to air. The relation of the Sb electrode potential to the satd. calomel electrode potential is linear up to pH 8.0, and amounts to 57.0 mv. per unit of pH. Correct measurement is possible between pH 8.0 and 12.0 if a correct calibrating curve is available. The temp. correction is 0.6 to 1.6 mv. per degree, and depends upon pH. The Sb electrode with the satd. calomel electrode is especially suitable for pH detns. in all kinds of soil even with H_2O of about 10% and in culture media.

Jan Micka

CA HANOUSEK, J.

7

Colorimetric and interferometric determination of humic acids. Josef Hanousek (Ústav pro rostlinnou výrobu, Prague, Czech.). *Sborník Českoslov. Akad. Zemědělské* 25, 65-74(1952)(English summary).—There is no lineal dependency of the extinction of the solns. of humic acids (I) (Na salts) on the wave length of the light. The color intensity in the alk. solns. of I is not directly proportional to the C content. The Lambert-Beer law is valid only for pure solns. with high mol. components; it is not valid for successively peptized components. Extn. with 0.5% NaOH does not destroy the structure of the extractable materials. I formed under anaerobic conditions are probably considerably resistant to oxidation. A sensitive and precise interferometric method for the detn. of C in alk. fractions of I is described. Jan Micka

CA HANOUSEK, J.

Properties of humic acids and their role in the decomposition of organic material. Josef Hanousek (Ústav pro rostlinnou výrobu, Prague, Czech.). *Sborník Českoslov. Akad. Zemědělské* 25, 74-80(1952).—The acetyl bromide method shows the development of maturity in compost and the change of "alive" to "stable" humus. Over 60% of stable manure contains org. matter which can be extd. by boiling NaOH soln. Mol. wt. and the carboxyl, methoxyl, and hydroxyl functional groups influence the decompn. of org.

matter. The degree of mol. binding in the org. compds. which are successively liberated by microorganisms in the cellular tissues of plant remains influences the intensity of adsorption and the decompn. In the decompn. of stable manure in the soil the changes in the fractions of humic acids (I) obtained by alk. extn. are: the individual I fractions are displaced, and decomp. in the soil, and the decompn. of I increases on advancing from the lower to the higher fraction or with one fraction at a time. The C compds. which cannot be hydrolyzed by 80% H_2SO_4 decrease and the fraction insol. in acetyl bromide increases. The lower the percentage of the total org. matter in the soil, the faster is the decompn. The rapidity is increased by higher concn. of the org. inactive matter with a const. quantity of microorganisms. In the detn. of the relation of I fractions to the stable humus it was proved that the method of alk. extn. cannot be used for manure, compost, or soils. For the analyses of C and I, an interferometric method was used. Jan Micka

HANOUSEK, JOSEF

Chemical Abst.
Vol. 48
Apr. 10, 1954
Soils and Fertilizers

3

The analysis and properties of humic acids. Josef Hanousek. *Sborník Českoslov. Akad. Zeměděl. Věd* 26A, 491-8(1953).—A reply to Najmr's criticism (*Sborník Českoslov. Akad. Zemědělské* 25, 21, 22(1952)). Analytical nos. were used for humic acids and not for humic matters. Knop's oxidative-gravimetric method is not rejected, but in detn. of C in alkali exts. this method is replaced by a more sensitive and rapid interferometric method. Detn. of C in humic acids by an oxidimetric method for empirically detd. factors is rejected, and theoretically the impossibility of exact detn. is shown. The limitation of a spectrophotometric method for detn. of C in humic acids is shown.

Jan Mička

11-5-54

~~Joes HANOUSEK~~

HANOUSEK, JOSEF

CZECHOSLOVAKIA/Analysis of Organic Substances. G-3

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 19742

Author : Josef Hanousek.

Title : Determination of Vapors of Organic Compounds with Interferometer.

Orig Pub : Prumysl potravin, 1955, 6, No 3, 146-152

Abstract : The author describes and recommends a simple and accurate enough method for testing the properties of packing materials with reference to how they let organic vapors pass through. Questions connected with phenomena taking place when vapors of organic compounds pass through packing materials are discussed.

Author's abstract.

Card 1/1

Hanousek, J.

Hanousek, J. Examination of the protective property of wrappers. p. 32.
Outline of the plan for 1957. p. 35.

Vol. 8, no. 1, 1957.
PRUMYSL POTRAVIN
TECHNOLOGY
Czechoslovakia

So. East European Accessions, Vol. 6, No. 5, May 1957

HANOUSEK, J.; BALCAROVA, A.

Importance and determination of the ralative humidity of food in selecting wrapping materials. p. 186. (Prumysl Potravin, Vol. 8, No. 4, 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

HANOUSEK, Josef

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Prague, Chemicke Listy, Vol 56, No 4, April 1962

1. "The Chemistry of Trans-Curium Elements," Miroslav KRIVANEK of the Joint Nuclear Research Institute [original-language version not given] in Dubna, USSR; and Miroslav KYRS, formerly of the A. Zapotocky Military Academy (Vojenska Akademie A. Zapotockeho) in Brno, present address: the CSAV [Ceskoslovenska Akademie Ved; Czechoslovak Academy of Sciences] Nuclear Research Institute (Ustav jaderneho vyzkumu) in Rez near Prague; pp 351-358.
2. "Induced Reactions in Analytical Chemistry," by Z. H.; pp 369-371.
3. "Application of Organic Reagents in Amperometric Titrations of Certain Rare Elements," F. VYDRA (affiliation not given]; pp 372-375.
4. "Determination of the Permeability of Foils for Sulphur Dioxide," Josef HANOUSEK and Ladislav [illegible] of the Packaging Institute (Obalovy ustav), Prague; pp 375-382.
5. "Measurement of the Efficiency of Flotation Forming Agents," Petr [illegible] and Jan KLOUCEK, CSAV Institute of Geochemistry and Mineral Raw Materials (Ustav geochemie a nerostnych surovin), Prague; pp 382-389.
6. "Peristaltic Pump for Dosing Small Quantities of Polluted Liquids," Jiri [illegible], CSAV Polarographic Institute (Polarograficky ustav), Prague; pp 389-391.
7. "Cells for the Near Infra-Red Region, Suitable for the UR-10 Spectrophotometer," Josef [illegible] and Ivo KOSSLER, CSAV Institute of Physical Chemistry (Ustav fysikalni chemie), Prague; pp 392-393.
8. Briefs; pp 394-405.
9. Book reviews; pp 405-413.
10. "About Publishing. Part II. Forms of Publications," J. SKODA and M. KRAUS [affiliations not given]; pp 415-417.
11. "Comments on the Teaching of Biochemistry at the Natural Sciences Faculties," L. KOVAC [affiliation not given]; pp 417-420.
12. "The 1961 Nobel Prize for Chemistry," J. KOSTIR [affiliation not given]; p 421.
13. "Report on the 24 November 1961 Session of the Central Committee of the Czechoslovak Chemical Society within the CSAV," unsigned; pp 422-426.

FLECEK, Jan, inz.; HANOUSEK, Josef, inz.; KAMENICKY, Vlastimil, inz.

Separation of tall oil soap. Papir a celulosa 19 no. 1:1-4 Ja '64.

1. Podnikovy vyzkum Severoceskych papiren, Stesti.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

HANOUSEK V.

Ca

10

Some higher alcohol amines. I. Action of the reactive Grignard on the ester of 4-dimethylaminobutyric acid. V. Prelog and V. Hanousek. *Collection Czechoslov. Chem. Comm.* 3, 276-80(1931).—Et 4-dimethylaminobutyrate gave with an excess of EtMgBr in Bu_2O 2 products, 6-dimethylamino-3-hexanone (I), b_{14} 70-75°, and 6-dimethylamino-3-ethyl-3-hexanol (II), b_{14} 100-5°. I was identified as the picrate, m. 111.5°, and the picrolonate, m. 135.5°. II would not form the Bz deriv. (steric hindrance). The HCl salt of II m. 173-4° and the picrate m. 104-5°. II gave with MeI trimethyl(4-ethyl-4-hydroxyhexyl)ammonium hydroxide, m. 133-4°; picrate, m. 104°. These compds. are of interest from a *pharmacol. standpoint.* J. W.

COMMON ELEMENTS

MATERIALS INDEX

OPEN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

HANOUSEK, V.

Ca

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PROCESSES AND PROPERTIES INDEX

Synthesis of isonipecotic acid. V. HANOUSEK AND V. PRELOG. *Collection Czechoslov. Chem. Communications* 4, 250–70(1932).—Condensing $(ClCH_2CH_2)_2O$ with $CNa(CO_2Et)_3$ gave the *di-Et tetrahydropyran-4,4-dicarboxylate*. The free acid on decarboxylation gave *tetrahydropyran-4-carboxylic acid* (I), b_{12} 102–4°, m. 80°. Esterification of I gave its *Et ester*. Treating I with HBr gave *1,5-dibromopentane-3-carboxylic acid* (II), m. 58–9°, identified by its *Et ester* (III), b_7 133°, and its *amide*, m. 77–8°. Distn. of II gave *β-(β-bromoethyl)butyrolactone*, b. 137°. Heating I with excess HCl gave *1,5-dichloropentane-3-carboxylic acid*, m. 54–5°. When III is heated with NH_3 in MeOH, *isonipecotic acid* (IV) is obtained, identified by its *HCl salt*, m. 293° (decompn.), its *chloroplatinate*, m. 239–40° (decompn.), and its *p-toluenesulfonate*, m. 170°. Methylating IV in HCl gave the *Me isonipecotate-HCl*, m. 109°. Other by-products in the original condensation were identified as *di-Et (β-ethoxyethyl) propyl ether-3′,3′-dicarboxylate*, b. 146–7°, which gave a *diamide*, m. 138–9°, and *tetra-Et dipropyl ether-3,3,3′,3′-tetracarboxylate*, which gave a *tetramide*, m. 226°.

R. CHESTER ROBERTS

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

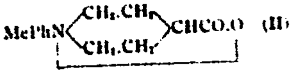
PROCESSES AND PROPERTIES INDEX

HANOVSEK, V.

CA

10

1-Phenylpiperidine-4-carboxylic acid. V. Prelog and V. Hanousek. *Collection Czechoslov. Chem. Communications* 6, 225-30(1934); cf. *C. A.* 28, 5302^{4}.—$PhNH_2$ (1.5 mol.), gently boiled with Et 1,5-dibromopentane-3-carboxylate (0.1 mol.) for 12 hrs., gave 35% of *1-phenylpiperidine-4-carboxylic acid* (I) as its *anilide*, m. 210° (from 90% alc.); free acid m. 131° (from alc.); *HBr salt*, m. 218-19° (from H_2O); *picrate*, m. 207° (decompn.) (from MeOH). I (1.7 g.), heated at 100° in a sealed tube 1 hr. with MeI (8 g.), gave 2.0 g. of the *methiodide* (pptd. from alc. soln. by Et_2O), decompg. 180°, which was oxidized by Ag_2O to the *methylbetaine* (II), m. 266° (pptd. from MeOH by Et_2O or Me_2CO). II, heated at low pressure and 260-300°, changed into the *Me ester* of I, m. 46° (from petroleum ether). The mother liquor from the anilide yielded 10.6 g. *1-phenyl-3-(β-phenylaminoethyl)pyrrolidone-2* (III), m. 128-9° (from alc.). III was also obtained (65% yield) by boiling 3-(β-bromoethyl)-butyrolactone (0.05 mol.) with $PhNH_2$ (0.5 mol.). It was not decompd. by heating 5 hrs. at 165° in a sealed tube with excess HBr, but gave the *HBr salt* m. 182-3° (from MeOH). All m. ps. uncor.



$$MePhN\left\langle\begin{matrix}CH_2.CH_2\\CH_2.CH_2\end{matrix}\right\rangle CHCO.O \quad (II)$$

M. P. Benoy

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

HANOUSEK, V.

25

Effect of pH on dyeing with Eriochrome Black T. V. Hanousek and Z. Allan. *Chem. Listy* 45, 227(1951); cf. Rals and Kryštofová, *C.A.* 45, 4044i.—Doubts are expressed about the correctness of the Eriochrome Black T formula and the amt. of chrome fixed by the dye. M. Hudlický

HANOUSEK, V. : MATRKA, M.

"Oxidation of the leuco base of malachite green by means of sodium bichromate in the presence of oxalic acid, In German."

p. 473 (COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS. SBORNIK CHECKSHOSOLVATSKIKH KHIMICHESKIKH RABOT. -- Praha, Czechoslovaka.)
Vol. 22, No. 2, April 1957

SO: Monthly Index of East European Accession (EEAI) LC, Vol. 7, No. 5, May 1958

CZECHOSLOVAKIA / Organic Chemistry, Synthetic Organic Chemistry. G-2

Abs Jour : RZhKhim., No 10, 1958, No 32426

Author : Vitezslav Hanousek, Miroslav Matrka.
Inst : Not given
Title : Dissociation of Diphenoquinone-(4,4')-bis-dimethylimmonium in Aqueous Medium [sic]

Orig Pub : Chem. listy, 1957, 51, No 2, 341-348; Sb. chekhosl. khim. rabot, 1957, 22, No 5, 1464-1472.

Abstract : The spontaneous dissociation of diphenoquinone-(4,4')-bis-dimetylimmonium sulfate (I) in acid and alkaline media was studied. In both cases the I solution was filtered after having aged 48 hours and after the alkalization of the acid solution; CH_2O was detected in the filtrate. The precipitate was treated with n-$CH_3C_6H_4SO_2Cl$ in C_5H_5N, after which n,n'-[$C_6H_4N(CH_3)_2$](II) and a mixture of substances were separated. n,n'-$(CH_3)_2NC_6H_4C_6H_4N(CH_3)SO_2C_6H_5CH_3$ (III) and n,n'-[$C_6H_4N(CH_3)SO_2C_6H_4CH_3$]$_2$ (IV) were separated from that

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CZECHOSLOVAKIA / Organic Chemistry. SyntheticOrganic Chemistry. G-2

Abs Jour : RZhKhim., No 10, 1958, No 32426

mixture by chromatography on Al_2O_3. The yields of CH_2O, II, III and IV (III and IV recounted into non-tosylated products) are correspondingly in % as follows: in acid medium -50.5, 32.5, 14.0 and 12.0; in alkaline medium - 37.5, 44.0, 8.5 and 6.0. The following mechanism of I dissociation is suggested based on the obtained results, as well as on the magnitudes of oxidation-reduction potentials of N-methyl- and N,N-dimethylbenzidine, II, n,n'-$(C_6H_4NHCH_3)_2$ (V) and p,n'-$(CH_3)_2NC_6C_6H_4NHCH_3$ (VI), which are 0.92, 0.90, 0.87, 0.86 and 0.86 v respectively and which have been determined by potentiometric titration with $Ce(SO_4)_2$: I is aromatized by the subtraction of electrons from the methyl group with the simultaneous splitting off of a proton. The produced cation is neutralized by OH ions in N,N,N'-trimethyl-N'-oxymethylbenzidine, which decomposes furtehr into VI and CH_2O; VI oxidizes at the expense of I to diphenoquinone-

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Abs Jour : RZhkhim., No 10, 1958, No 32426

-(4,4')-methylimidedimethylimmonium (VII), at which occasion II is forming from I. VII decomposes into CH_2O and V, the latter oxidizes probably to diphenoquinone-(4,4')-bis-methylimide; the separation of the decomposition products of the latter has not succeeded. n,n'-$(CH_3)_2NC_6H_4C_6H_4NHSO_2C_6H_4CH_3$ or N-tosylbenzidine (VIII) is methylated with $(CH_3)_2SO_4$ in NaOH solution, III is obtained, the yield is 87 and 79% respectively, melting point 156 to 157° (from alcohol). 9.5 g of III and 8 g of phenol are boiled 8 hours with 180 mlit of 45%-ual HBr, VI is produced, yield 76%, melting point 99 to 101° (from alcohol); N-acetyl derivative, melting point 187° (from alcohol). The following is produced correspondingly by the methylization of N-acetylbenzidine (IX) or N'-acetyl-VIII (X) with $(CH_3)_2SO_4$: n,n'-$CH_3CONHC_6H_4C_6H_4N(CH_3)_2$, yield 53%, melting point 224 to

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HANOUSEK, Vitezslav

Distr: 4E2c(j)

Aromatic *N*-monoalkylated amines or *N,N'*-dialkylated diamines by alkylation of primary aromatic amines with alcohols. Jaroslav Horyna, Otakar Cerny, and Vitezslav Hanousek. Czech. 87,381, Oct. 15, 1957. Heating in an autoclave 2.16 moles $PhNH_2$ (I), 5.40 moles abs. EtOH, and 5.05 g. Raney Ni (II) 6 hrs. to 220°, filtering, and distg. the mixt. gives 2.1% unreacted $PhNH_2$, 71.8% PhNHEt (III), and 10.6% $PhNEt_2$. Analogously is obtained 59.0% p-$BuNHC_6H_4NHBu$. An alternative method consists of heating 1 mole I, 12.0 g. EtOH, and 11.0 g. II 15 hrs. to 150° with removal of H_2O yielding 8.4% I and 65.1% III. Similarly is obtained 71.5% PhNHBu. L. J. Urbánek

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HANOUSEK, V. ; DOBAS, J.

"Fluorescent derivatives of 1,2,3,-triazole. Introductory remarks."

p. 1101 (Chemicke Listy, Vol. 51, no. 6, June 1957, Praha, Czechoslovakia.)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 6, June 1958.

CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

Author : Dobas Jaroslav, Pirkl Jaromir, Hanousek Vitezslav.
Inst :
Title : Fluorescent Derivatives of 1,2,3-Triazole. I. Sulfonic Acids of Bis-Naphtho-Triazoles Based on p-Phenylene-Diamine, Benzidine, Benzidine Sulfone and Diamino-Diphenyl-Urea. II. Sulfonic Acids of Benzo- and Naphtho-Triazoles Based on 4,4'-Diaminostilbene-2,2'-Disulfonic Acid. III. Sulfonic Acids of Derivatives of Naphtho-Triazole Based on 4-Amino-Diphenyl. IV. Color and Fluorescence of Some Drivatives of 2-Phenylnaphtho-/1,2/-Triazole. V. Acyl-Derivatives of 2-(3' and 4'-Amino-phenyl)-Naphtho-/1,2/-Triazole Sulfonic Acids.

Orig Pub: Chem. listy, 1957, 51, No 6, 1103-1112, 1113-1121, 1122-1126, 1127-1135, 1136-1141.

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CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

Abstract: I. A number of polysulfonic acids of bis-naphthotriazoles have been synthesized, which are derivatives of p-phenylene diamine, benzidine (I), benzidine sulfone, and diaminodiphenyl-urea. Investigated were their color, fluorescence (F) on cellulose, bleaching action on cotton, substantive properties, and absorption in ultraviolet light, with the view of a possible utilization of these compounds as optical clearing agents. It follows from a detailed discussion of correlations between properties and chemical structure that substitution in the naphthotriazole ring has no effect upon substantial changes in optical properties, while substitution by sulfo-groups, chlorine, CH_3- and CH_3O-groups in the middle portion of the molecule affects considerably the

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

optical and color properties of the derivatives under study, all the properties being altered concomitantly. A considerable role in the retention of desirable properties of optical bleaching agents is played by coplanarity of the molecule. The substances thus obtained are of a relatively low fastness to light. A solution of 0.1 mole of phenyl-diazonium chloride (150 ml) is added dropwise (0-5°, o.5 hour) to a solution of 0.12 mole of 2-aminonaphthalene-6-sulfonic acid (II) in 1.4 liters of water and 80 ml 2.5 N solution of Na_2CO_3. After 2 hours at 5° the mixture is heated to 80°, sated out with NaCl, the dyestuff paste is dissolved in 2.5 liters of water at 80° and is oxidized by addition of 150 ml of a solution of NaOCl (0.13 g NaOCl per 1 ml). After

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

dilution with water to 8 liters there are added 250 ml of the NaOCl solution, and by an addition of NaCl 28 g Na-salt of 2-phenyl-naphtho-[1,2]-triazole-7-sulfonic acid are salted out. The dyestuff obtained by coupling 0.1 mole p-nitrophenyl diazonium chloride with 2-naphthylamine-5,7-disulfonic acid (III), is separated by salting out, dissolved in 2.5 liters of water and oxidized with NaOCl. The resulting nitro-triazole is reduced according to Bechamp, without being isolated. After removal of Fe the soda filtrate is salted out and made acid to Congo with HCl (acid), to get the mono-Na salt of 2-(4'-aminophenyl)-naphtho-[1,2]-triazole-6,8-disulfonic acid, yield 78% (determined volumetrically with $NaNO_2$).

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

0.05 mole of the acid are diazotized and coupled, in Na_2CO_3 solution, with 0.05 mole III, the dye is salted out and oxidized with NaOCl to the tetra-Na salt of 1,4-bis-(2-naphtho-/_1,2_7-triazolyl)-benzene-6', 8', 6", 8"-tetrasulfonic acid, yield 24 g. An acid solution of 0.05 mole tetrazotized I is neutralized to Brilliant Yellow with a solution of Na_2CO_3 and is coupled at 0 with 0.05 mole II in 400 ml water and 25 ml 2.5 N Na_2CO_3. The solution of the monoazo-dye is added dropwise at 20-30° to a solution of 0.07 mole III in 600 ml water and 400 ml pyridine, after 15 minutes 300 ml of the liquid are distilled off, the residue is diluted to 1.5 liter and oxidized (boiling for 40 minutes) with 0.22 mole $CuSO_4$ in 400 ml water and 300 ml 25% NH_4OH. The

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

precipitated Cu-salt of bis-triazole trisulfonic acid is dissolved in 2 liters of 30% pyridine, and a saturated solution of NaCl is used to precipitate, at 90°, 28 g of mono-Na salt of 4,4'-bis-(naphtho-[1,2]-triazolyl)-diphenyl-6",8",7'"-trisulfonic acid (IV). The mono-Na salt of 4,4'-bis(naphtho-[1,2]-triazolyl)-diphenyl -5",9", 7'"-trisulfonic acid is prepared analogously, using 1-naphthylamine-4,8-disulfonic acid (V) in the last coupling. Analogously is synthesized the mono-Na salt of 4,4'-bis-(naphtho-[1,2]-triazolyl)-diphenyl-4",7",7'"-trisulfonic acid; the last azo-coupling being carried out with 2-naphthylamine-3,6-disulfonic acid (VI). Coupling of tetrazotized I in Na_2CO_3 medium with III, V or VI, and oxidation

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

of the resulting bis-azo-dyestuff, yielded, respectively, the tetra-Na salt of 4,4'-bis-(2-naphtho-/1,2/-triazolyl)-diphenyl-6",8",6"', 8"'-tetrasulfonic acid, -5",9",5"',9"-tetrasulfonic acid, and 4",7"4"',7"'-tetrasulfonic acid. Coupling of 0.01 mole tetrazotized benzidine-3-sulfonic acid with 2-naphthylamine-5-sulfonic acid (VII) in Na_2CO_3 medium, oxidation of resulting dye with $CuSO_4$ in NH_4OH, and salting out, yielded 7.5 g tri-Na salt of 4,4'-bis-(2-naphtho-/1,2/-triazolyl)-diphenyl-3,6",6"'-trisulfonic acid. Analogously were synthesized, from benzidine-3,3'-disulfonic acid and VII, and benzidine-2,2'-disulfonic acid and 2,6-naphthylamine sulfonic acid, the tri-Na salts of 4,4'-bis-(2-naphtho- /1,2/-triazolyl)-di-

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

phenyl-3,3',6",6"'- and 2,2',7",7"'-tetrasulfonic acid. Coupling of tetrazotized o-dianisidine with III (gradually, in acid, neutral, and acetate-medium), and oxidation of the dye with $CuSO_4$ in aqueous pyridine, yielded the tetra-Na salt of 4,4'-bis-(2-naphtho-[1,2]-triazolyl)-3,3'-dimethoxy-diphenyl-6",8",6"',8"'-tetrasulfonic acid. From tetrazotized o-tolidine and III, in aqueous pyridine, was obtained the tetra-Na salt of 4,4'-bis-(2naphtho-[1,2]-triazolyl)-3,3'-dimethyl-diphenyl-6",8",6"',8"'-tetrasulfonic acid. Analogously from 3,3'-dichlor-benzidine and III (in neutral and $NaHCO_3$ media) the resulting dyestuff yielded on oxidation with $CuSO_4$ in aqueous pyridine, the tetra-Na salt of 4,4'-bis-

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

(2-naphtho-[1,2]-triazolyl)-3,3'-dichlor-diphenyl-6",8",6"',8"'-tetrasulfonic acid. By the action of $COCl_2$ on di-Na salt of 2-(4"-aminophenyl)-naphtho-[1,2]-triazolyl-6',8'-disulfonic acid, in water in the presence of Na_2CO_3, was obtained the tetra-Na salt of 4,4'-bis-(2-naphtho-[1,2]-triazolyl)-diphenyl-urea-6",8",-6"',8"'-tetrasulfonic acid. Coupling of tetrazotized benzidine sulfone with III (in Na_2CO_3 and oxidation with $CuSO_4$ in aqueous pyridine) yields the tetra-Na salt of 3,6-bis-(2-naphtho- 1,2 -triazolyl)-diphenylsulfone-6',8',-6",8"-tetrasulfonic acid. From 3-amino-6-acetylamino-diphenylenesulfone-2-sulfonic acid and VII, in a solution of CH_3COONa, splitting off of acetyl by boiling with NaOH, further coupling with VII and oxidation of resulting dis-azo-

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

dyestuff ($CuSO_4$ in NH_4OH), is synthesized the tri-Na salt of 3,6-bis-(2-naphtho-[1,2]-triazolyl)-diphenylenesulfone-2,6',6"-trisulfonic acid.

II. A number of fluorescent derivatives of benzo- and naphtho-triazole were obtained from 4,4'-diaminostilbene-2,2'-disulfonic acid (VIII). Investigated were the F of these substances on cellulose, their color, bleaching effect on cotton, comparative substantive properties, and absorption in the ultraviolet region. From correlations between chemical structure and F, it follows that the F-carrier is the triazole ring substituted in position 2. The ring substituted in position 1 does not fluoresce in the visible region. F develops only after

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

introduction of amino-group into the nucleus condensed with the triazole ring, the latter being a weak chromophor of an effectiveness equal to the group =C=O or -CH=N-. As a result of introduction of amino groups there takes place a bathochromic shift in F and absorption. The substances prepared in the course of this research are faster to light than the naphtho-triazole sulfonic acids described in Communication I. A suspension of 0.025 mole tetrazotized VIII is added ropwise (5-10°, 30 minutes) to a solution of 0.525 mole Na-salt of VII and 0.15 mole CH$_3$COONa in 500 ml water, the mixture is stirred (5-10°, 2 hours), heated to 80°, 0.075 mole Na CO are added, stirring is continued for 1 hour, then the batch is diluted to 2 liters, 75 ml

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

25% NH_4CH and 0.1 mole $CuSO_4$ in 200 ml water are added, the mixture is heated to 90-95° within 30 minutes, made acid with 70 ml concentrated HCl, at 60^c, and salted out with NaCl to get an 85-90% yield of tetra-Na salt of 4,4'-bis-(2-naphtho- [1,2] -triazolyl)-stilbene-2,2',6",6"'-tetrasulfonic acid (IX), utilized as an optical clarifying agent. If the dyestuff of the preceding experiment is oxidized to IX by means of NaOCl, there are found on paper chromatography (elution with 10% NH_4OH), in addition to IX, spots corresponding, apparently, to 2-(4'-carboxyphenyl)-naphtho- [1,2] -triazole-6,3'-disulfonic acid (R_f 0.725) and 2-(4'-formyl-phenyl)-naphtho- [1,2] -triazole-6,3'-disulfonic acid (R_f 0.47). Standard solution for chromatography is obtained by oxidation of

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

a 2% aqueous solution of IX with a 5% solution of $KMnO_4$ at 80°. Analogously to IX there is obtained from VIII and the corresponding naphthyl-amino sulfonic acids the tetra-Na salts of 4,4'-bis-(2-naphtho- [1,2] -triazolyl)-stilbene-2,2',5",5"'-tetrasulfo- and -2,2',7",7"'-tetrasulfonic acid. Tri-Na salt of 4-amino-4'-(2-naphtho- [1,2] -triazolyl)-stilbene-2,2',5"-trisulfonic acid (X) is obtained by the previously described procedure (BIOS, 1945, Misc. Rep. 20, Appendix 15). On interaction 4-nitro-benzoyl chloride with X in aqueous solution at 80^c, in the presence of CH_3COONa, there is obtained, after reduction according to Bechamp and salting out, the tri-Na salt of 4-(p-amino-benzoylamino)-4'-(2-naphtho-[1,2] -triazolyl)-stilbene-2,2',5"'-trisulfonic acid

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(XI). Similarly to X is obtained the acid di-Na salt of 4-amino-4'-(2-naphtho-[1,2]-triazolyl)-stilbene-2,2',6"-trisulfonic acid (XII) which is isolated in pure form after conversion of the crude XII to the 4-acetyl derivative, recrystallization of the latter from water, and saponification by boiling with 5% NaOH. Tri-Na salt of 4-benzoylamino-4'-(2-naphtho-[1,2]-triazolyl)-stilbene-2,2',6"-trisulfonic acid is obtained from XII and C_6H_5COCl at 40-50° in 20% pyridine; crystals (from water). 6 g phenyl-isocyanate are added at 10-20° to a solution of 0.04 mole XII in 400 ml water, the mixture is stirred for 12 hours, diluted to 450 ml, heated to 85°, and there is obtained from the filtrate, after cooling, the tri-Na salt of 4-phenyl-ureido-4'-(2-naphtho-

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

[1,2]-triazolyl)-stilbene-2,2',6"-trisulfonic acid. Analogously to XI, p-nitro-benzoylation of XII and reduction of the resulting nitro-benzoyl derivative, gives the tri-Na salt of 4-(p-amino-benzoylamino)-4'-(2-naphtho-[1,2]-triazolyl)-stilbene-2,2',6"-trisulfonic acid. 800 ml of aqueous suspension of 0.1 mole tetrazotized VIII are added within 30 minutes to a solution of 0.22 mole m-phenylene diamine in 1.7 liters water and 0.15 ml soda, the mixture is diluted with 500 ml water, stirred (10 hours) and salted out at 85° to get the corresponding tetra-azo-dye. The latter is dissolved in 2.5 liters of water and after addition of 400 ml 20% NH_4OH and 0.8 mole $CuSO_4$ in 600 ml water, the solution is heated (95°, 30 minutes), 200 g

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

MgO, are heated for 8 hours at 170°/8 atmospheres, diluted to 1 liter, 40 ml 2.5 N NaOH are added at 80°, and from the filtrate are salted out the crude Na-salt of 4,4'-bis-(2"-nitro-4"-sulfo-phenylamino)-stilbene-2,2'-disulfonic acid (XIII), which yields on reduction according to Bechamp the corresponding 2"-amino-derivative (XIV). The latter is dissolved in 800 ml water, acidified with 100 ml 10 N HCl, there are added dropwise 32 ml 2.5 N $NaNO_2$ at 10°, and there is separated the Na-salt of 4,4'-bis-(1-benzotriazolyl)-stilbene-2,2',5",5"'-tetrasulfonic acid (XV). 1-methyl-benzotriazole, MP 65°, and 2-methyl-benzotriazole, BP 102°/15 mm, are obtained by the previously described method (Krollpfeiffer F. et al., Liebigs Ann. Chem., 1935, 515, 113). 0.05 mole sulfanilic

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acid (XVI) in 120 ml alcohol and 40 ml pyridine are boiled for 30 minutes with 0.05 mole O-nitrosoacetanilide and 80 ml glacial CH_3COOH, 2-- ml of liquid are driven off by steam distillation, the residue is boiled (1 hour) with 150 ml 40% NaOH, the resulting dyestuff is filtered off by suction and oxidized with an excess of NaOCl at 80°, to get 1 g of Na-salt of 2-phenyl-benzotriazole-4'-sulfonic acid, crystals (from water). By an analogous sequence of reactions, as in the case of XIII - XV, there is obtained from 2-nitro-chlorobenzene and aniline, the Na-salt of 1-phenyl-benzotriazole-5-sulfonic acid. A solution of 0.2 mole Na-salt of XVI in 300 ml water is mixed with 120 ml 20% CH_3COONa, a solution of 0.2 mole 2,4-dinitro-chlorobenzene in

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are distilled off, 650 ml water are added, and the batch is acidified with 60 ml HCl (acid). The monosulfonic acid is filtered off by suction, dried at 110°, sulfonated (115-120°, 4 hours) in 200 g 100% H_2SO_4, and ther is isolated the di-Na salt of 2-xenyl-naphtho-/1,2/-triazol-6,4"(?)-disulfonic acid (XIX). The dyestuff obtained by coupling of 0.05 mole diazotized 4-amino-4'-methoxy-diphenyl with 0.055 mole III in 2 liters of water and 200 ml pyridine, at 50°, is salted out after distilling off the pyridine, oxidized with $CuSO_4$ in aqueous pyridine, and salted out to get 22 g of di-Na salt of 2-(4"-methoxyphenyl)-naphtho-/1,2/-triazole-6,8-disulfonic acid. The dyestuff (from 0.01 mole 4'-chloroxenyl-diazonium chloride and 0.012 mole III in 200 ml 30% pyridine) is oxidized

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without isolation. The Cu-salt of the product is dissolved in 150 ml water and 50 ml HCl (acid), and salting out yields 4 g of di-Na salt of 2-(4"-chloroxenyl)-naphtho-/1,2/-triazole-6,8-disulfonic acid. The dyestuff obtained from 0.02 mole diazotized 4-amino-diphenyl-3-sulfonic acid and 0.022 mole III in CH CCONa solution is isolated /and yields ?/ 1.3 g Na-salt of 2-xenylnaphtho-/1,2/-triazole-6,3'-disulfonic acid. Dyestuff (from 0.06 mole diazotized 4-amino-4'-acetylamino-diphenyl-3-sulfonic acid and 0.1 mole VII in $NaHCO_3$ solution) is isolated by salting out and oxidized with $CuSO_4$ in pyridine, and the acetyl is split off by boiling with 10% HCl to get 34.2 g di-Na salt of 2-(4"-amino-xenyl)-naphtho-/1,2/-triazole-6,3'-di-

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Abs Jour: Ref Zhur-Khim., No13, 1958, 43397.

sulfonic acid (XX, the acid); with $(CH_3CO)_2O$ in $NaHCO_3$ solution at 40° it forms the acetyl derivative which was analyzed as the Ba-salt, $C_{14}H_{16}O_7N_4S_2Ba.4H_2O$. p-Methoxybenzoyl-, phenacetyl- and phenoxy-acetyl-derivatives of XX are obtained by acylation with the corresponding acid chlorides in 20% aqueous pyridine at 40-80° and were analyzed as the Ba-salts.

IV. Investigated were the changes in color and F brought about by introduction of amino-, methoxy- and sulfo-group in the derivatives of 2-phenyl-naphtho-/1,2/-triazole. Introduction of amino-group in position 4' or 2' of the phenyl residue causes a bathochromic shift in color and F. An

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amino group in position 3' does not alter the color and causes only a bathochromic shift in F. Introduction of a single sulfo-group in position 4, 5, 6, 7 and 8 of the naphthalene ring produces no substantial effect on either color or F. Introduction of an additional sulfo-group causes a bathochromic shift in color and F. A sulfo- or a methoxy-group in position 2' decreases the F, while in position 3' it induces a hypsochromic shift in absorption, with no change in F. The paper includes ultraviolet spectra of the compounds that were prepared, and data concerning their F and color. 0.1 mole diazotized XVI are added at 15° to a suspension of 0.11 mole of 2-naphthylamine (XXI) in 100 ml pyridine, the mixture is poured in 1 liter

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of water, stirred for 12 hours, salted out with NaCl, acidified with HCl (to Congo) to get the dye; the latter is oxidized in 2 liters of water (90-95°, NaOCl) and salted out to get 25.8 g of Na-salt of 2-phenylnaphtho-[1,2]-triazole-4'-sulfonic acid. The dyestuff [from 0.05 mole 4-oxalyl-amino-aniline-3-sulfonic acid (XXII) and 0.055 mole XXI] is dissolved in 400 ml water and 100 ml concentrated NH_4OH and oxidized (90°, 0.1 mole $CuSO_4$ in NH_4OH), the resulting triazole is saponified by boiling (3 hours) with 400 ml 2.5 N NaOH, the product is extracted with water to get 11.2 g Na-salt of 2-(4'-aminophenyl)-naphtho-[1,2]-trazole-3'-sulfonic acid (from 40% pyridine). Coupling of 0.1 mole diazotized 4-nitraniline-2-sulfonic acid

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with 0.11 mole XXI, oxidation of the resulting dye, the same as in the preceding experiment, and reduction of the resulting nitro-triazole, according to Bechamp, yields 18 g of Na-salt of 2-(4'-aminophenyl)-naphtho-/1,2/-triazole-2'-sulfonic acid. Coupling of 0.1 mole diazotized p-nitraniline, at 15°, with a solution of 0.11 mole Na-salt of 1-naphthylamin-3-sulfonic acid in CH_3COONa solution, oxidation (90-95°, NaOCl), salting out, and Bechamp reduction of the nitro-derivative, yields 6.8 g of technical Na-salt of 2-(4'-aminophenyl)-naphtho-/1,2/-triazole-4-sulfonic acid. Analogously were prepared the Na-salts of the following acids: 2-(4'-aminophenyl)-naphtho-/1,2/-triazole: 5-sulfonic, 6-sulfonic, 7-sulfonic, 8-sulfonic, 6,8-

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disulfonic, 4,7-disulfonic, and also the Na-salts of 2-(2'-aminophenyl)-naphtho-[1,2]-triazole-7-sulfinic, 2-(3'-aminophenyl)-naphtho-[1,2]-triazole-7-sulfonic, 2-(3'-aminophenyl)-naphtho-[1,2]-triazole-6,8-disulfonic, 2-(4'-amino-2'-methoxyphenyl)-naphtho[1,2]-triazole-6-sulfonic, and 2-(2',4'-phenylene-diamino)-naphtho-[1,2]-triazole-6-sulfonic. 0.1 mole diazotized XXII are added dropwise at 15° to a solution of Na-salt of VII and 50 g CH_3COONa in 1 liter of water, the mixture is stirred for 12 hours, heated to 70°, made alkaline to Brilliant Yellow, and salted out to separate the dyestuff, which is then oxidized in 500 ml water (90-95°, 0.2 mole $CuSO_4$ in NH_4OH). The Cu-salt thus obtained is boiled (5 hours) with

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Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397.

hydroxy-triazinyl-(2")-amino-phenyl_7-naphto-/1,2/-triazole-6,8-disulfonic acid (XXV) are characterized by a strong bleaching effect on cellulose, but they are of low fastness to light. Acylation of the amino-group of the phenyl residue, in position 4' or 3', produces a hypsochromic shift in F-color while the absorption itself is not altered. The paper includes ultraviolet spectra of absorption of the prepared substances, data on their F on cellulose in acidic and alkaline media, bleaching effect on cotton, and their relative substantive properties. 0.03 mole $(CH_3CO)_2O$ are added ropwise to a solution of 0.01 mole Na-salt of 2-(3'-aminophenyl)-naphtho-/1,2/-triazole-6,8-disulfonic acid in 30 ml water and 24 ml 2.5 N

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solution of 0.1 mole Na-salt of VII and 50 g CH_3COONa in 700 ml water. The batch is stirred (3 hours), salted out, and the resulting dyestuff is oxidized in 300 ml 20% pyridine with 0.18 mole $CuSO_4$ in 200 ml water, to get 35 g of Na-salt of 2-(4'-acetaminophenyl)-naphtho-[1,2]-triazole-6,3'-disulfonic acid; Ba-salt $C_{18}H_{12}O_7N_4S_2Ba.4H_2O$. A suspension of mono-Na salt of 2-(4'-aminophenyl)-naphtho-[1,2]-triazole-6,8-disulfonic acid (XXVI) in 20 ml diethyl aniline and 8 ml C_6H_5COCl is heated for 15 minutes to a boil, then 6 g Na_2CO_3 in 250 ml water are added to the solution, the diethyl aniline is distilled off with steam, and the residue is salted out to get 2.3 g of XXIII. 3 ml

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CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 13, 1958, 43397

of phenyl isocyanate are added to 0.01 mole XXVI in 350 ml water, at 30°, the mixture is stirred (7 hours), the residue is filtered off by suction at 85°, and salting out yields 5.5 g XXIV. 2.4 g cyanuric chloride in 10 ml acetone are added dropwise to 0.01 mole XXVI in 35 ml water, at 0-3°, then 4 ml 2.5 N Na_2CO_3 are added (1 hour), the batch is cooled to 10°, 30 ml 25% NH_4OH are added, the batch is allowed to stand for 15 hours, and is then heated to 70° and salted out to get 6 g of di-Na salt of 2-[4'(4"-amino-6"-hydroxy-triazinyl-(2")-amino)-phenyl]-naphtho-[1,2]-trazole-6,8-disulfonic acid. 24 g of fused m-$O_2NC_6H_4COCl$ are added to 0.1 mole XXVI in 500 ml water and 50 ml pyridine, at 60-70°, the mixture is stirred for 25 minutes, the resulting nitro-compounds are reduced according to

Card : 33/34

COUNTRY : Czechoslovakia G-2
CATEGORY : Organic Chemistry--Synthetic organic chemistry

ABS. JOUR. : RZKhim., No. 16 1959, No. 57147

AUTHOR : Dobas, J., Pirkl, J., and Hanousek, V.
INST. : Not given
TITLE : Fluorescent Derivatives of 1,2,3-triazole. VII. Sodium Salts of Some Bis- and Tris-triazolesulfonic Acids
ORIG. PUB. : Chem Listy, 52, No 7, 1310-1313 (1958)

ABSTRACT : The authors have synthesized the Na salts of a number of bis- and tris-triazolesulfonic acids (I-V) and have determined their brightening effect, fastness to light on cotton yarns, and directness. The starting materials used in the synthesis were derivatives of 5-aminobenzotriazole (VI), obtained by the oxidation of azo dyes following coupling of the diazo compounds of aniline, sulfanilic acid, or naphthionic acid with m-phenylenediamine. The

CARD: 1/9

COUNTRY : Czechoslovakia G-2
CATEGORY :

ABS. JOUR. : RZKhim., No. 16 1959, No. 57147

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : characteristic properties of I-V were determined by methods described earlier (RZhKhim, No 24, 1958, 81695) (the compound, hue of the compound's fluorescence on cellulose, the relative directness factor R_D expressed in terms of the distance from the spot formed by the test compound relative to that of the spot formed by the standard (4,4'-bis-(2-naphtho-(1,2)-triazolyl)-3,3'-dichlorodiphenyltetrasulfonate-6'',8'',6''',8''' of sodium) during

CARD: 2/9

G-2

COUNTRY : Czechoslovakia
CATEGORY :

ABS. JOUR. : RZKhim., No. 16 1959, No. 57147

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT :

paper chromatography, and the brightening effect on cotton are given in that order): I, blue-violet (BV), 0.2, 2; II, BV, 0.16, 2; III, blue-

CARD: 3/9

132

COUNTRY : Czechoslovakia G-2
CATEGORY :

ABS. JOUR. : RZhKhim., No. 16 1959, No. 57147

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : BV, 0.36, 1-2; IV, blue-BV, 0.07, 2; V, BV, 0.03, 2-3. The light-fastness of I-V on cotton fibers is greater than that of bis-triazoles based on p-phenylenediamine, benzidine, and similar compounds but less than that of derivatives containing a stilbene residue. The brightened yarn shows an insignificant tendency to yellowing on exposure to light. I is synthesized from the diazotized Na-salt of 2-(4'-sulfophenyl)-VI (0.03 mol) which is added dropwise (30 min)

CARD: 4/9

COUNTRY : Czechoslovakia G-2
CATEGORY :

ABS. JOUR. : RZKhim., No. 16 1959, No. 57147

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : in the form of a suspension to a solution of 0.033 mol of sodium 2-naphthylamino-5-sulfonate (VII) in 150 ml water together with 100 ml 20% CH_3COOH. After stirring for 1 hr the mixture is heated to 80° and made alkaline with 10 gms soda. The dye is salted out with 50 gms NaCl, dissolved in 300 ml water, 20 ml 20% NH_3, and 40 ml C_5H_5N, and oxidized at 80-90° with an ammoniacal solution of 0.12 mol $CuSO_4$; salting out gives 13 gms of I dihydrate. II is synthe-

CARD: 5/9

COUNTRY : Czechoslovakia G-2

CATEGORY :

ABS. JOUR. : RZKhim., No. 16 1959, No. 57147

AUTHOR :

INST. :

TITLE :

ORIG. PUB. :

ABSTRACT : sized from diazotized 2-phenyl-VI (0.02 mol) and 0.024 mol Na 2-naphthylamino-5,7-disulfonate with the addition (3 hrs) of 100 ml 2.5 N Na_2CO_3. The dye is salted out with 70 gms NaCl from the mixture heated to 70°; following salting out the dye is dissolved in 200 ml water and oxidized at 70° with NaOCl solution until the color disappears. The product is salted out and precipitated twice with alcohol from aqueous solution to give the dihydrate of II, yield 2 gms. III

CARD: 6/9

COUNTRY : Czechoslovakia G-2
CATEGORY :

ABS. JOUR. : RZKhim., No. 16 1959, No. 57147

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : is obtained from diazotized Na 2-(4'-sulfonaphthyl)-benzotriazole-6-sulfonate (0.03 mol), a suspension of which is added (about 20°, 30 min) to a solution of 0.033 mol VII and 20 gms CH_3COONa in 150 ml water. Following salting out, the dye is oxidized by refluxing with 0.06 mol ammoniacal $CuSO_4$ solution; the product is converted to the Na salt by heating in water with the addition of Na_2CO_3 and $Na_2S_2O_4$; the yield of III dihydrate is 7.5 gms. IV is synthesized from 0.01 mol

CARD: 7/9

134

COUNTRY : Czechoslovakia G-2
CATEGORY :

ABS. JOUR. : RZKhim., No. 16 1959, No. 57147

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : out the dye is oxidized at 70° with NaOCl; the yield of V dihydrate is 9.8 gms. For Communication VI see RZhKhim, No 23, 1958, 77690.

J. Vanecek

CARD: 9/9

125

Country : Czechoslovakia G-2
Category : Organic Chemistry. Synthetic Organic Chemistry

Abs. Jour. : Ref. Zhur/-Khimiya No. 6, 1959 19488

Author : Dobas, J.; Pirkl, J.; Hanousek, V.
Institut. :
Title : Fluorescent Derivatives of 1,2,3-Triazole. IV. Color and Fluorescence of Some Derivatives of 2-Phenylnaphtho-[1,2]-Triazole. V. Acyl *

Orig Pub. : Collect. czechosl. chem. commun., 1958, 23, No 7, 1346-1356, 1357-1363.

Abstract : See RZhKhim, 1958, 43397.

Card:1/1

* Derivatives of 2-(3'- and 4'-Aminophenyl)-Naphtho-[1,2]-

CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khim., No 11, 1959, 38630.

Author : Hanousek, V.
Inst :
Title : Side Products of Fluorescein Fusion.

Orig Pub: Chem Listy, 52, No 4, 707-717 (1958) (in Czech)

Abstract: The author has made a detailed analysis of the so-called spent fluorescein (SF) and of the mother liquors (ML) left after the precipitation of fluorescein (I). From the ML, in addition to small amounts of phthalic acid (II) and of resorcinol (III), the author has separated 2-(2',4'-dihydroxybenzoyl)-benzoic acid (IV) which in all likelihood is an intermediate product of the synthesis. The SF in addition to the main component I

Card : 1/4

CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khim., No 11, 1959, 38630.

has also yielded an orange dye, $C_{21}H_{18}O_8$ (V), of undetermined structure which, however, is not 1',8'-dihydroxyfluorane (VI) or 1',6'-dyhydroxyfluorane (VII) and 3,6-dihydroxy-9,9-dimethylxanthene (VIII). The compounds described in the literature (N. N. Ghatak and S. Dutt, J Indian Chem Soc, 6, 465 (1920); M. Dominikiewicz, Roczniki Chem, 10, 367 (1930))as VI and VII in reality are unpurified I. The substance VIII is identical with an earlier synthesized substance (Mayer, Ber, 40, 1451 (1907)) to which an incorrect structure has been assigned. 100 ml of ML are diluted with 350 ml water, the solution is extracted with ether, and the aqueous layer is evaporated; 2.5 gms I, 0.2 gm II, 1.5 gm III, and small amounts of IV are obtained. From 60 gms

Card : 2/4

CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khim., No 11, 1959, 38630.

SF reprecipitated with dil (1 : 1) HCl from alkaline solution and extracted with ether, 1.25 gm II and 0.6 gm V (mp 360°, decomp; from C_5H_5N) are obtained by fractionation; the diacetyl derivative (DAD) of V has an mp of 294-296° (from ethyl acetate-alc); dibenzoyl derivative (DBD) mp 299-300° (from 1 : 4 C_5H_5N-alc). 1 gm VII is also obtained, mp 305° (from 50% alc), R_f 0.98, DAD mp 200-204° (from ethyl acetate), DBD mp 201-204° (from alc). The alkaline extract yields VIII, mp 226.5° (from dil alc). VIII has been synthesized in yields of 13.6-15.4% by heating (140°, 6 hrs) 500 gms III with an equal amount of $ZnCl_2$ and diluting with 800 ml water and 100 ml alc. VIII is obtained in 78.5% yield by the slow heating of 110 gms

Card : 3/4

CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis. G

Abs Jour: Ref Zhur-Khim., No 11, 1959, 38630.

III with 58 gms acetone and 110 gms $ZnCl_2$ (140°), continuing the heating for 6 hrs when the reaction temperature has been reached, and diluting with 200 ml. alc; DAD mp 151.5-152.5° (from alc), DBD mp 185.5-186.5° (from ethyl acetate); the dimethyl ester of VIII (VIIIa) (prepared by treating with $(CH_3)_2SO_4$ in 2.5 N NaOH) is obtained in 92.5% yield (crude), BP 180-185°/0.8 mm, mp 88-90° (from alc); the dinitroderivative of VIII, mp 268° (from alc) is obtained in 86% yield by refluxing with 10% HNO_3; the mononitro derivative of VIIIa, mp 151-153° (from dil alc), is obtained by refluxing VIIIa with 40% HNO_3. VI was not synthesized; V and VII do not dye wool. All melting point temperatures are corrected. -- J. Kovar.

Card : 4/4

G-33

Country : Czechoslovakia E-3
Category : Analytical Chemistry. Analysis of Organic Substances.
Abs. Jour. : Ref. Zhur.-Khimiya No. 6, 1959 19195

Author : Matrka, M.; Hanousek, V.
Institut. :
Title : Oxidimetric Determination of Malachite Green with Cerium(4+) Sulfate.

Orig Pub. : Chem. listy, 1958, 52, No 4, 755-757

Abstract : The new method of quantitative determination of malachite green (I) consists in potentiometric titration of the corresponding carbinol (II) with an oxidizing agent -- a solution of $Ce(SO_4)_2$. In the course thereof I is oxidized to diphenoquinone-(4,4')-bis-dimethylimmonium and benzoic acid. Commercial I is first converted to II to separate it from oxidizable admixtures, for example $(COOH)_2$. The method is suitable for analysis of brilliant green (III), which need not be converted to the II. To a solution of 0.5 g I in 100 ml water are added 10 ml 1 N solution NaOH, precipitate of II is filtered off after 20 minutes on a G3 filter, washed with 20 ml 0.1 N solution NaOH, dissolved in 50 ml

Card: 1/3

E-46

Country : Czechoslovakia E-3

Category :

Abs. Jour. : 19195

Author :

Institut. :

Title :

Orig Pub. :

Abstract : approximately 1%). The method is not suitable for analysis of crystal violet, methyl violet, and of the sulfonated dyes of this group. -- J. Vanecek.

Card: 3/3

~~Vitezslav~~ HANOUSEK, V

5
2 May
1

Distr; 4E2c(j) 1

A note on the oxidation mechanism of Malachite green. Vitezslav Hanousek and Miroslav Matrka (Výzkumný ústav org. synthes, Pardubice-Rybitví, Czech.). *Chem. listy* 52, 1774-9(1958).—The oxidative fission of Malachite green (I) to BzOH and diphenoquinone 4,4'-bisdimethyliminonium deriv. (II) is proved to be intramol. and assumed to proceed by way of a labile cyclopropane deriv. (III). This view is supported by the results of oxidation of an equimolar mixt. of I and Brilliant green (IV) which gives exclusively sym. II and diphenoquinone 4,4'-bisdiethyliminonium deriv. (V) whereas the unsym. dye *4-dimethylamino-4'-diethylaminotriphenylcarbinol* (VI) gives only the unsym. diphenoquinone 4-dimethyl-4'-diethyliminonium deriv. (VII). Oxidation of a mixt. of $PhNMe_2$ and $PhNEt_2$ gives a mixt. of all three possible products, II, V, and VII. This result supports the intramol. course of the oxidative fission. Dissolving 1 g. I oxalate in 100 ml. H_2O and 100 ml. N H_2SO_4, stirring the mixt. 3 hrs., adding 20 ml. 4*N* $C_2H_2O_4$ and 50 ml. 0.2*N* $Na_2Cr_2O_7$, stirring an addnl. 10 min., adding 0.5 g. Zn dust, alkalizing the soln. with NaOH to Brilliant yellow, filtering, washing the ppt. with H_2O, drying at 105°, and extg. with EtOH gave 95.0% *N,N,N',N'-tetramethylbenzidine* (VIII), m. 194°. Acidification of the alk. filtrate gave 97.8% BzOH. Similar treatment of 0.1 millimole VI with $C_2H_2O_4$ and $Na_2Cr_2O_7$, reduction with Zn dust, and paper chromatography of the resulting mixt. revealed the presence of VIII, *N,N,N',N'-tetraethylbenzidine* (IX), and *N,N-dimethyl-N',N'-diethylbenzidine* (X), R_f 0.25, 0.70, and 0.48, resp., on Whatman No. 3 impregnated with 10% 1-bromonaphthalene in EtOH and eluted with 2% AcOH. Similar procedure with an equimolar mixt. of I and IV gave only VIII and IX and not even a trace of X. Treating an equimolar mixt. of $PhNMe_2$ and $PhNEt_2$ with $C_2H_2O_4$ and $Na_2Cr_2O_7$ and subsequently reducing with Zn dust gave VIII, IX, and X. Treating 0.0227 g. *p*-$Me_2NC_6H_4CHPhOH$ in 5 ml. H_2O and 5 ml. *N* H_2SO_4 with 2 ml. 2*N* $C_2H_2O_4$ and 4 ml. 0.1*N* $Na_2Cr_2O_7$, adding after 5 min. 0.2 g. Zn dust, and alkalizing the mixt. with NaOH gave by benzene extn. traces of VIII and BzH. Stirring and heating 11.3 g. acetylbenzidine, 30 g. *p*-$MeC_6H_4SO_3Et$, 15 g. $NaHCO_3$, and 100 ml. H_2O 15 hrs. at 60-70°, filtering off the cryst. product (12.3 g.), dissolving in 20 ml. C_5H_5N, adding 6 g. *p*-$MeC_6H_4SO_2Cl$ in 10 ml. C_5H_5N, dilg. the mixt. after 3 hrs. with 200 ml. H_2O and 35 ml. HCl, filtering, and treating the filtrate with 140 ml. 2.5*N* Na_2CO_3 gave 73% *N,N-diethyl-N'-acetylbenzidine* (XI), m. 103-5° (EtOH). Refluxing 2.8 g. XI with 10 ml. HCl 3 hrs. and treating the soln. with NH_4OH gave 92% *N,N-diethylbenzidine* (XII), m. 124-6° (EtOH). Stirring 2.4 g. XII, 3.8 g. Me_2SO_4, 3 g. $NaHCO_3$, and 60 ml. H_2O 3 hrs. at room temp., heating the mixt. 2 hrs. at 80°, adding 10 ml. 40% NaOH, refluxing 2 hrs., cooling, sepg. the solid product (2.6 g.), dissolving it in 10 ml. C_5H_5N, refluxing with 0.5 ml. Ac_2O, pptg. with H_2O, and recrystg. from 90% EtOH gave 71% X, m. 94.0-5°.

M. Hudlický

[illegible] 1/1

HANOUSEK, V.; MATRKA, M.

"Oxidation mechanism of Malachite green." In German. p. 16.

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czechoslovakia, Vol. 24, No. 1, Jan. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 6, Sept. 59

Unclassified

G-2

COUNTRY : Czechoslovakia

CATEGORY :

ABS. JOUR. : RZKhim., No. 22 1959, No. 78638

AUTHOR : Dobas, J., Pirkl, J., and Hanousek, V.

INST. : Not given

TITLE : Fluorescent Derivatives of 1,2,3-Triazole. VII. The Sodium Salts of Some bis- and tris-triazolesulfonic Acids

ORIG. PUB. : Collection Czechoslov Chem Commun, 24, No 3, 731-743 (1959)

ABSTRACT : See RZhKhim, 1959, No 16, 57146.

CARD: 1/1

COUNTRY : Czechoslovakia E-3
CATEGORY :

ABS. JOUR. : RZKhim., No. 1959, No. 86302

AUTHOR : Matrka, M.; Hanousek~~, V.~~
INST. :
TITLE : Oxydimetric Determination of Malachite Green with Cerium(4+) Sulfate.

ORIG. PUB. : Collect. Czechosl. Chem. Communs, 1959, 24, No 4, 1347-1350
ABSTRACT : See RZhKhim, 1959, No 6, 19195.

CARD:

HORYNA, J.; HANOUSEK, V.

Nitration of naphthalenesulfonic acids. II. Nitration of 1,5- and 1,6-naphthalenedisulfonic acids in sulfuric acid. Coll Cz chem 26 no.1:79-90 Ja '61. (EEAI 10:9)

1. Organisch-technologisches Laboratorium I., Forschungsinstitut fur organische Synthesen, Pardubice-Rybitvi.

(Nitration) (Naphthalenesulfonic acid)
(Naphthalenedisulfonic acid)
(Sulfuric acid)

HANOVA, M.

Electrocardiographic changes induced by ethylene glycol dinitrate and glyceryl trinitrate. Bratisl. lek. listy 45 no.4:220-224 31 Ag '65.

1. Klinika chorob z povolania a hygieny prace v Bratislave (veduci prof. MUDr. M. Nosal).

HANOVA, Vera, dr.

Development of mole drainage techniques. Vodni hosp 12 no.12:484-485 D '62.

1. Reditelstvi vodohospodarskeho rozvoje, Praha.

ZISKA, J.; HANOVA, V., dr.

Age and qualification composition of technical and economic specialists in the water resources management. Vodni hosp 14 no.10:2 of cover-3 of cover '64.

POLAND / Weeds and Weed Control N

Abs Jour: Ref Zhur-Biol., 1958, No 17, 77961

Author : Hanower, P.; Janicka, J.
Inst : Not given
Title : Influence of Regulex and Cresotol on the Content of Moinst Protein in Some Cereal Grains

Orig Pub: Roczn. nauk rolniczuck, 1956, A73, No 1, 153-164

Abstract: With the spraying of oat crops in the 2-3 phase of leaves with an 0.2% solution of regulex (derivative 2.4-D) the Division of Plant Feeding and Fertilization, Institute of Agrotechnics, Fertilization and Soil Science, in a test conducted in Pos'ventnyy, obtained an increase of the

Card 1/2

HANOWER, P.; JANICKA, I.; HOFF, M.; BRZOZOWSKA, J.

The effect of HCH on corn. Rocz nauk roln rosl 80 no.4:741-752 '60.
(EEAI 9:11)

1. Stacja Chemiczno-Rolnicza w Warszawie.
(Poland--Corn (Maize))
(Hexachlorocyclohexane)

HANOWER, P.; JANICKA, I.; BRZOZOWSKA, J.; HOFF, M.

The chemical composition and fodder value of maize and the uptake of mineral components in the four stages of development. Rocz nauk roln rosl 82 no.4:1009-1024 '61.

AKERMAN, Karol; HANOWSKI, Jerzy

Application of isotope methods in engineering in the
Skandinavian countries. Przegl techn 84 no. 39: 6
29 S '63.

1. Instytut Badan Jadrowych, Warszawa.

HANS, OTTO

1-FW

/ **Hanš, Otto.** A note on negative binomial distribution. Apl. Mat. 2 (1957), 222-226. (Czech. Russian and English summaries)

In this paper there are given two formulae for "tails" of negative binomial distribution, an approximate formula:

$$\sum_{k=n}^{\infty}\binom{\beta+k-1}{k}p^{\beta}q^{k}=\sum_{j=0}^{r-1}\binom{n+\varepsilon+j-1}{n-1}p^{j+\varepsilon}q^{n}+Z,$$

where the remainder Z satisfies the inequality

$$0\leqq Z\leqq\varepsilon(\varepsilon+1)q^{n}/p^{1-\varepsilon},$$

n and r are natural numbers, $\beta=r+\varepsilon$, $0\leqq\varepsilon\leqq1$, and an exact formula:

$$\sum_{j=0}^{c}\binom{\beta+j-1}{j}p^{\beta}q^{j}=\sum_{j=0}^{c}\binom{\beta+c}{j}p^{\beta+c-j}q^{j}.$$

Author's summary.

1/1

HANŠ O.

16(2) PHASE I BOOK EXPLOITATION CZECH/2556

Conference on Information Theory, Statistical Decision Functions, Random Processes. 1st, Liblice, 1956.

Transactions. Prague, Czechoslovak Academy of Sciences, 1957. 354 p. 1,000 copies printed.

Sponsoring Agency: Československá Akademie Věd. Sekce Technická.

Reviewers: Václav Dupač and Miloslav Jiřina; Scientific Ed.: Jaroslav Kožešník, Corresponding Member, Czechoslovak Academy of Sciences; Resp. Ed.: Ludek Böhm; Tech. Ed.: František Končický.

PURPOSE: This book is intended for specialists interested in information theory and related subjects.

COVERAGE The book contains papers read at the First Prague Conference on Information Theory, Statistical Decision Functions, and Random Processes, held on November 28 - 30, 1956. The Conference was sponsored by the Czechoslovak Academy of Sciences and organized by the Institute of Radio Engineering and Electronics. The papers discuss various mathematical approaches to the problems of communications: information theory, probabilistic properties of communication, stochastic properties of communication, entropy, transformations of stochastic properties, statistical decision functions, randomized functional analysis, etc. Participants from China, Germany, Poland, Sweden, the United States, and the Soviet Union were present at the Conference. Of the 21 articles in the book, 14 are in English, 4 in French, 2 in German, and 1 in Russian.

Driml, M. and A. Spacek. (Czechoslovakia). Continuous Random Decision Processes Controlled by Experience 43

Hanš, O. (Czechoslovakia). Generalized Random Variables 61

Hanš, O. Random Fixed Point Theorems 105

Hanš, O. Inverse and Adjoint Transforms of Linear Bounded Random Transforms 127

Hanš, O. Almost Sure Convergence Theorem for Random Schwartz Distributions 135

Nedoma, J. (Czechoslovakia). Note on Generalized Random Variables 139

Pérez, A. (Czechoslovakia). Generalized Concepts of Uncertainty, of Entropy and of Information From the Point of View of the Theory of Martingales 183

Pérez, A. On Information Theory in the Case of an Abstract Alphabet 209

Pérez, A. On the Convergence of Uncertainty, Entropy, and Information Samples Toward Their True Values 245

Špaček, A. (Czechoslovakia). An Elementary Experience Problem 253

Špaček, A. Extension of Probabilistic Transformations 259

Ullrich, M. (Czechoslovakia). Some Theorems on Random Schwartz Distributions 273

Votavová, L. (Czechoslovakia). Theorem on the Extreme of Entropy 283

Winkelbauer, K. (Czechoslovakia). Experience in Games of Strategy and in Statistical Decision 297

AVAILABLE: Library of Congress

Card 5/5

LK/jb
12-1-59

Hans, O.

2.

Hanš, Otto. Reduzierende zufällige Transformationen. ~~Czechoslovak~~ Math. J. 7(82) (1957), 154–158. (Russian summary)

The following is the main result of the paper. Consider an abstract space Ω with a σ-algebra S, and also a complete, separable metric space X. Let T be a reducing measurable transformation from $\Omega \times X$ onto X, choose a generalized stochastic variable $g_1(\omega)$ with values in X, and form $g_{n+1}(\omega)=T[\omega, g_n(\omega)]$. Then the sequence $g_1(\omega)$, $g_2(\omega)$, $\cdots$ converges to a generalized stochastic variable, which is the fixed point associated with T. This theorem is applied to the study of integral equations of Fredholm type.

U. Grenander (Providence, R.I.).

CG

1/1

Reducible Random Transformations.

HANS, O.

Visit of Prof. N. Wiener in Prague. Activ. nerv. sup. 3 no.3:346-352 '61.

(CYBERNETICS)

HANS, Otto, CSc.; KREPELA, Josef, Inz.

Mathematical statistics in production quality control.
Tech praca 16 no. 6:408-410 Je '64.

1. Institute of Information Theory and Automation, Czechoslovak Academy of Sciences, Prague.

HANSA, Miloš

Determination of absorption curves in ultraviolet region. Miloš Hansa (Research Inst. Vacuum Technol., Prague). *Hutnické Listy* 8, 358-61(1953).—A method is described for the detn. of the absorption spectrum of glasses transmitting ultraviolet light by means of a quartz emission spectrograph. The spectrum of a W electrode is photographed through a series of Pt filters of known absorption and through the sample. The absorption of the sample is detd. by linear interpolation—a valid assumption unless the blackening is very small or very large. The method is applied to $KMnO_4$ soln., Cl gas, reflection spectra of thin metal layers (Al, Cu, Mg, Si, Ni, Ag) on glass, and absorption spectra of CaF_2, ruby, quartz, Rose de France (*sic*), and sapphire. The results are compared to those obtained by means of older methods involving variation of the concn. or the exposure time. The present method is much more rapid. H. Newcombe

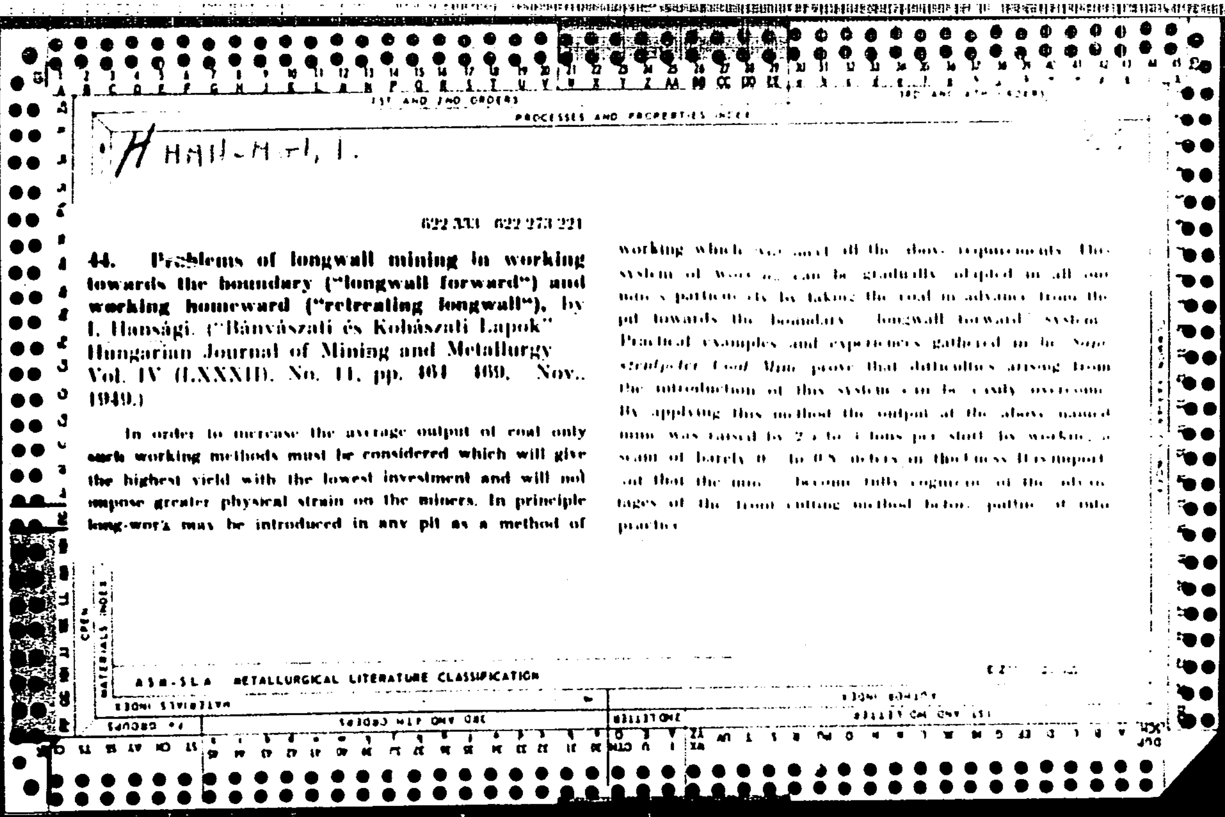
PH

HANSA, M.

Ruthenium. p. 47.

SLABOPROUDY OBZOR. Praha. Vol. 15, no. 1, Jan. 1954.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March 1956.



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

H HANSAGI, I.

622.333 622.273.221

44. Problems of longwall mining in working towards the boundary ("longwall forward") and working homeward ("retreating longwall"). by I. Hansági. ("Bányászati és Kohászati Lapok" Hungarian Journal of Mining and Metallurgy Vol. IV (LXXXII). No. 11, pp. 401–409. Nov., 1949.)

In order to increase the average output of coal only such working methods must be considered which will give the highest yield with the lowest investment and will not impose greater physical strain on the miners. In principle long-work may be introduced in any pit as a method of working which will meet all the above requirements. This system of working can be gradually adopted in all our mines particularly by taking the coal in advance from the pit towards the boundary ("longwall forward" system). Practical examples and experiences gathered in the *Szentpéter Coal Mine* prove that difficulties arising from the introduction of this system can be easily overcome. By applying this method the output of the above named mine was raised by 2.5 to 3 tons per shift by working a seam of barely 0.[illegible] to 0.8 meters in thickness. It is important that the miners become fully cognizant of the advantages of the front cutting method before putting it into practice.

MATERIALS INDEX

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Uncl.